

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-007030**Date Inspected:** 06-Feb-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 645**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1845**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei / Sun Bo**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Components**Summary of Items Observed:**

The Caltrans (CT) Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Orthotropic Box Girders (OBG).

**OBG Sub-Assembly Bay 12:**

The QA Inspector randomly observed ZPMC welding personnel performing heat straightening operations to reduce weld induced distortion from welding the T=35 mm thick I-Ribs to Deck Plate 1AE-DP610-001 at Complete Joint Penetration (CJP) Weld Joint (WJ) Numbers 012, 014, 016 and 018. 1AE-DP610-001 is placed upside down with heat being applied directly to the welds attaching the T=35 millimeter (mm) I-Ribs to Deck Plate 1AE-DP610-001. The QA Inspector randomly observed that jacks (passive) were in place, but no counter weights. This work was being performed in accordance with ZPMC Heat Straightening Request (HSR) HSR (B)-242 Rev. 0.

The QA Inspector randomly observed 1 ZPMC welder utilizing the Carbon Air Arc Gouging (CAAG) Process, to excavate marked areas in the CJP welds attaching the T=35 mm I-Ribs to Deck Plate 1AW-DP550-001, to remove rejects previously detected by ZPMC QC Ultrasonic Testing (UT) Examination.

The QA Inspector was requested by ZPMC QC to perform a QA Magnetic Particle Testing (MT) verification of the welds attaching the T=35 mm I-Ribs to the base plate and U-Rib closure diaphragm on Deck Plate 1AW-DP565-001. The QA Inspector performed a random 10% MT verification of the CJP welds attaching the I-Ribs to the base plate of DP565-001 and observed a linear indication in WJ 009 on the outside at Y=98 mm. The

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QA Inspector was then informed by the ZPMC Foreman in Bay 12, that ZPMC QC had not completed QC MT. The QA Inspector discontinued the QA MT verification at this point.

The QA Inspector witnessed ZPMC MT Technician Wang Wei, perform a 100% ZPMC QC MT Inspection of the welds attaching the T=35 mm I-Ribs to the base plate and U-Rib closure diaphragm on Deck Plate 1AW-DP565-001. Mr. Wang detected a total of 8 linear indications and marked them up for repairs. The QA Inspector randomly observed that 7 out of 8 of the indications were transverse.

The QA Inspector randomly observed ZPMC welders Jiang Jing Guang ID 062265 and Xu Guo Yin ID 059443, utilizing the Flux Cored Arc Welding (FCAW) Process in the 2G/2F (Horizontal Groove/Horizontal Fillet) Positions with ZPMC Weld Procedure Specification (WPS) WPS-345-FCAW-2G (2F)-Repair-1 to weld repairs to the CJP WJ 014 attaching a T=35 mm I-Rib to Deck Plate 1AW-DP570-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed a ZPMC cutting torch operator utilizing a hand held cutting torch, to cut the copes in bottom of the vertical seam weld between the U-Ribs and the U-Rib Extensions at CJP WJ's 015, 016 and 017 on Deck Plate 1AE-DP605-001.

The QA Inspector randomly observed 1 ZPMC helper utilizing an angle grinder, to clean out excavations in the welds attaching the T=35 mm I-Ribs to Deck Plate 1AW-DP550-001 after CAAG operations had been performed to remove UT Rejects.

The QA Inspector performed a 100% Visual Testing (VT) Inspection and 10% random MT verification of the first 1500 mm of horizontal WJ's 011, 013, 015 and 100% VT and 10% random MT verification of the entire lengths of vertical WJ's 251, 252 and 253, to allow for the fit up of the U-Rib Extensions to the U-Ribs on 3 of the 4 U-Ribs.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

### Summary of Conversations:

No relevant conversations.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang 150-0042-2372, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Franco,Charlie	Quality Assurance Inspector
<b>Reviewed By:</b>	Clifford,William	QA Reviewer

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